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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/648,277

08/27/2003

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EXAMINER

CHRISS, ANDREW W

ART UNIT

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/648,277	<b>Applicant(s)</b> TSUTSUMI ET AL.	
	<b>Examiner</b> Andrew Chriss	<b>Art Unit</b> 2419	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 09 July 2008.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3,5,6,8-17,19,20 and 22-29 is/are rejected.
- 7) ☒ Claim(s) 4,7,18 and 21 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Response to Amendment***

1. Applicant's amendment, filed July 9, 2008, has been entered and carefully considered. Claims 28 and 29 are newly added, Claims 4-7, 11, 12, 18-21, and 25 are amended, and Claims 1-29 are currently pending.
2. Objection to Claims 11 and 25 is withdrawn in light of Applicant's amendment.
3. Rejection of Claims 4-7, 12, and 18-21 is withdrawn in light of Applicant's amendment.

### ***Claim Rejections - 35 USC § 102***

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
5. **Claims 1-3, 6, 12, 15-17, 20, 28, and 29** rejected under 35 U.S.C. 102(e) as being anticipated by Takayama et al (United States Patent Application Publication US 2002/0025810 A1), hereinafter Takayama.

**Regarding Claim 1**, Takayama discloses a structure wherein a mobile terminal, while communicating with an access point, serving as a parent station, over a wireless LAN, can be quickly switched from the parent station to an adjacent access point having an overlapping communication range (As shown in Fig: 1 in a high speed roaming, Station 3 moves from one AP to another AP, paragraph 0032); wherein the access point (Fig: 2) comprises: a wireless LAN interface for communicating with the mobile terminal over the wireless LAN (Figure 2, 22; paragraph 0037), a roaming unit for performing a roaming operation (Figure 2, 24; paragraph 0039), a beacon transmitter for transmitting a beacon signal to provide synchronization with the

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mobile terminal (paragraph 0052), and a data transmitter (Figure 2, 22) for transmitting access point data required for the roaming operation (paragraph 0042). **Further regarding Claims 1 and 15**, Takayama discloses a mobile terminal comprising a wireless LAN interface (Figure 3, 32) and a CPU that scans and monitors beacons for peripheral access point data for storage in a database (paragraphs 0077-0081). When the beacon quality of the current subscription drops below a threshold value, the mobile station looks in the database to find the access point having the best radio environment (Figure 8; paragraph 0081).

**Regarding Claims 2 and 16**, Takayama discloses selection of the best radio environment once the RSSI value for a beacon of the currently subscribed access point drops below a threshold value (paragraph 0081).

**Regarding Claims 3 and 17**, Takayama discloses monitoring beacon levels for peripheral access points, storing the related data in a database, and connecting to the best communication environment once the RSSI value for a beacon of the currently subscribed access point drops below a threshold value (paragraph 0081).

**Regarding Claims 6 and 20**, Takayama discloses the mobile station receiving a RSSI value (known in the art as a ratio indicating signal strength) and basing roaming decisions on said received value (paragraphs 0077 and 0081).

**Regarding Claim 12**, Takayama discloses a master parent station periodically broadcasting a beacon reference signal comprising a time synchronization function to other access points, which serves to synchronize the access points (paragraph 0047). Takayama further discloses a backup capability wherein a slave access point can act as a master should a broadcast message not be received within a certain period of time (paragraph 0057). Therefore,

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when the master station is not able to send out its radio beacon containing hop information to the mobile terminal, another access point will be able to send this beacon without overlapping with another access point (Figure 8; paragraph 0077).

**Regarding Claims 28 and 29**, Takayama discloses obtaining access point data from the peripheral connectable access points (paragraphs 0077-0081).

### ***Claim Rejections - 35 USC § 103***

6. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

7. **Claims 5 and 19** rejected under 35 U.S.C. 103(a) as being unpatentable over Takayama in view of Schramm et al (United States Patent Application Publication US 2001/0046879 A1), hereinafter Schramm. Takayama discloses all of the limitations of Claims 2 and 16, as described above. Takayama further discloses sending a beacon from an access point to a mobile terminal (paragraphs 0077 and 0081). However, Takayama may not disclose an access point transmitting an error ratio of data to a mobile terminal, wherein the mobile terminal stores the received error ration. In the same field of endeavor, Schramm discloses a mobile terminal measuring link quality on for base station candidates, including a raw BER estimate on a traffic channel (paragraph 0039) and selecting a station based on the best quality of service observed (Figure 3a). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the BER estimation with the beacon transmission disclosed in Takayama in order to assess cell capabilities when making a handover in evolved wireless networks.

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8. **Claims 8, 9, 22, and 23** rejected under 35 U.S.C. 103(a) as being unpatentable over Takayama in view of Iimori (United States Patent 6,393,282).

**Regarding Claims 8 and 22**, Takayama discloses all of the limitations of Claims 1 and 15, as described above. Further, Takayama discloses storing a received RSSI value in a database on a mobile terminal, as described with regards to Claim 3. The received levels are compared among RSSI values sequentially received from neighboring access points (paragraph 0052). However, Takayama may not disclose a counter for counting the times for comparison or a roaming start instruction comprising the reception level being continuously lowered by a number that matches a predetermined count. In the same field of endeavor, Iimori discloses both counting the number of times a priority search is performed, wherein base stations are compared against one another for handoff, as well as decreasing a reception level by 1dB each time the search is performed (column 13, lines 14-21). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the counter and roaming start instruction disclosed in Iimori with the mobile station disclosed in Takayama in order to search for a base station according to a mobile station state and lengthen the mobile station battery life.

**Regarding Claims 9 and 23**, Iimori further discloses the mobile station sensing a received electric-field strength level. If the received level for a neighbor base station is equal or higher than a preset determination level, then handover is initiated (column 9, line 57 – column 10, line 22). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the handover initiation Iimori with the mobile station disclosed in Takayama in order to search for a base station according mobile station state and lengthen the mobile station battery life.

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9. **Claims 10 and 24** rejected under 35 U.S.C. 103(a) as being unpatentable over Takayama in view of Yuen (United States Patent 5,864,578). Takayama discloses all of the limitations of Claims 1 and 15, as described above. Takayama further discloses sending a beacon from an access point to a mobile terminal (paragraphs 0077 and 0081). However, Takayama may not disclose extracting an error ration included in a beacon signal and initiating a roaming operation when the error ration is larger than a predetermined error ration. In the same field of endeavor, Yuen discloses handoff initiation based on a high probability of error (column 20, lines 47-63). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the handoff initiation disclosed in Yuen with the beacon transmission disclosed in Takayama in order to provide handoff between two base stations without interrupting communications between a mobile terminal and the base stations.

10. **Claims 11 and 25** rejected under 35 U.S.C. 103(a) as being unpatentable over Takayama in view of del Prado et al (United States Patent Application Publication US 2003/0123405 A1), hereinafter del Prado. Takayama discloses all of the limitations of Claims 1 and 15, as described above. However, Takayama may not disclose the mobile terminal obtaining the end time of a contention-free period, included in a beacon signal and a probe response and searching for base stations except when data are transmitted and received, after the contention-free period is over. In the same field of endeavor, del Prado discloses a 802/11 point coordination function (PCF) that defines the start and end of a contention-free period via a beacon frame and a CF-End frame sent by the access point (paragraph 003). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the contention-free period disclosed in del

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Prado with the access point search disclosed in Takayama in order to avoid potential collisions in overlapping basic service sets.

11. **Claims 13, 14, 26, and 27** rejected under 35 U.S.C. 103(a) as being unpatentable over Takayama in view of Hunkeler (United States Patent Application Publication US 2004/0063426 A1).

**Regarding Claims 13 and 26**, Takayama discloses all of the limitations of Claim 12, as described above. Takayama further discloses passive scanning (paragraph 0009) and a beacon table for storing received RSSI values. However, Takayama may not disclose the passive scanner at the time recorded in the beacon table, excluding the time whereat the mobile terminal is transmitting and receiving data. In the same field of endeavor, Hunkeler discloses a handset performing passive scanning by listening to available beacons (paragraph 0004). Further, the conventional beacon contains a timestamp (paragraph 0003), thus the scanning is performed at the time recorded in the beacon and not when the handset is transmitting and receiving data. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the passive scanning disclosed in Hunkeler with the scanning disclosed in Takayama in order to broadcast information necessary for handover in WLAN systems.

**Regarding Claims 14 and 27**, Takayama discloses performing active scanning in the event that passive scanning does not obtain an access point (paragraph 0009). However, Takayama may not disclose an active scanner for examining an access point from which a response is received. In the same field of endeavor, Hunkeler discloses a probe-response mechanism for active scanning in WLANs (paragraph 0004). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the active scanning



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disclosed in Hunkeler with the scanning disclosed in Takayama in order to broadcast information necessary for handover in WLAN systems.

### ***Response to Arguments***

12. Applicant's arguments filed July 9, 2008 have been fully considered but they are not persuasive. Applicant states that Takayama fails to disclose the claim limitations of "an access point search unit for searching for peripheral connectable access points and for obtaining access point data" and "an access point data table in which the access point data detected and obtained by the access point search unit are recorded. Examiner respectfully disagrees. Per MPEP 2106: "USPTO personnel are to give claims their broadest reasonable interpretation in light of the supporting disclosure. *In re Morris*, 127 F.3d 1048, 1054-55, 44 USPQ2d 1023, 1027-28 (Fed. Cir. 1997). Limitations appearing in the specification but not recited in the claim should not be read into the claim. *E-Pass Techs., Inc. v. 3Com Corp.*, 343 F.3d 1364, 1369, 67 USPQ2d 1947, 1950 (Fed. Cir. 2003) (claims must be interpreted "in view of the specification" without importing limitations from the specification into the claims unnecessarily)." Takayama discloses a mobile terminal comprising a wireless LAN interface (Figure 3, 32) and a CPU that scans and monitors beacons for peripheral access point data for storage in a database (paragraphs 0077-0081) and the station entering "into the access point having the maximum RSSI at the rising time by the normal scanning" (paragraph 0077). Given its broadest reasonable interpretation, the step of "searching for peripheral connectable access points" is taught by the scanning operating disclosed by Takayama. Further, the access point data is downloaded from

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the access point found during the scanning operation (paragraphs 0009, 0010, 0055, and 0077).

Therefore, rejection of Claim 1 under 35 U.S.C. 102(e) is maintained.

***Allowable Subject Matter***

13. **Claims 4, 7, 18, and 21** objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Hundemer (United States Patent Application Publication US 2002/0154623 A1) discloses a loading beacon comprising a header, and a sequence of fields, each associated with an affiliate for which loading information is provided. The header includes a type identifier identifying the beacon as an affiliate loading beacon, followed by a region identifier for the region within which the affiliate loading is being reported. Thereafter, the header identifies a number of affiliates for which loading information is being identified. Finally, the header of the affiliate loading beacon identifies a lower and an upper connection number. As is explained in more detail below, these connection numbers are used to identify a subset of the clients to whom a particular beacon is to be directed. Only those clients whose connections fit within the range of the lower and upper connection number will respond to loading information to select potentially different transmitters for receiving Internet protocol information (paragraph 0061). However, the prior art does not disclose the claim limitation of “wherein the data transmitter of each of the at least two access points transmits, to the mobile terminal, the number of mobile terminals connected to the access point.”

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***Conclusion***

Applicant's amendment necessitated the new grounds of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew Chriss whose telephone number is (571)272-1774. The examiner can normally be reached on Monday - Friday, 7:30 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou can be reached on 571-272-3088. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Andrew Chriss  
Examiner  
Art Unit 2419  
10/17/2008

/Hassan Kizou/  
Supervisory Patent Examiner, Art Unit 2419